

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
22 September 2005 (22.09.2005)

PCT

(10) International Publication Number
WO 2005/086634 A3

(51) International Patent Classification:
G01N 33/48 (2006.01) **C12P 19/34** (2006.01)

(74) Agents: CASIMIR, David, A. et al.; Medlen & Carroll, LLP, 101 Howard Street, Suite 350, San Francisco, CA 94105 (US).

(21) International Application Number:
PCT/US2005/000386

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(22) International Filing Date: 7 January 2005 (07.01.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/754,415 9 January 2004 (09.01.2004) US

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(71) Applicant (*for all designated States except US*): ISIS PHARMACEUTICALS, INC.; 1896 Rutherford Road, Carlsbad, CA 92008 (US).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): ECKER, David, J. [US/US]; 1041 Saxony Road, Encinitas, CA 92024 (US). GRIFFEY, Richard, H. [US/US]; 360 Barsby Street, Vista, CA 92084 (US). SAMPATH, Rangarajan [US/US]; 12223 Mannix Road, San Diego, CA 92129 (US). HOFSTADLER, Steven, A. [US/US]; 1020 Park Hill Place, Vista, CA 92081 (US). MCNEIL, John [US/US]; 6389 Castejon Drive, La Jolla, CA 92037 (US). CROOKE, Stanley, T. [US/US]; 3211 Piragua Street, Carlsbad, CA 92009 (US).

Published:

— with international search report

(88) Date of publication of the international search report:
10 August 2006

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: A SECONDARY STRUCTURE DEFINING DATABASE AND METHODS FOR DETERMINING IDENTITY AND GEOGRAPHIC ORIGIN OF AN UNKNOWN BIOAGENT THEREBY

(57) Abstract: The present invention relates generally to the field of investigational bioinformatics and more particularly to secondary structure defining databases. The present invention further relates to methods for interrogating a database as a source of molecular masses of known bioagents for comparing against the molecular mass of an unknown or selected bioagent to determine either the identity of the selected bioagent, and/or to determine the origin of the selected bioagent. The identification of the bioagent is important for determining a proper course of treatment and/or irradiation of the bioagent in such cases as biological warfare. Furthermore, the determination of the geographic origin of a selected bioagent will facilitate the identification of potential criminal identity.



WO 2005/086634 A3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/00386

A. CLASSIFICATION OF SUBJECT MATTER

IPC: G01N 33/48(2006.01);C12P 19/34(2006.01)

USPC: 702/19;435/91.2

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 702/19; 435/91.2

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	MUDDIMAN et al., Anal. Chem., 1996, Vol. 68, No. 21, pages 3705-3712.	1-3
---		-----
Y		4-20
Y	Fred, et al., J. Am. Soc. Mass Spectrom., 1998, Vol. 9, pages 92-95.	1-20
X	Muddiman et al., Anal. Chem., 1997, Vol. 69, No. 8, pages 1543-1549	1-7, 10, 20
---		-----
Y		8-9, 11-19
Y,P	US 6,553,317 (LINCOLN et al) 22 April, 2003 (22.04.2003).	11-19
Y,P	US 6,389,428 (RIGALT et al) 14 May 2002 (14.5.2002).	1-20



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T"

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X"

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&"

document member of the same patent family

Date of the actual completion of the international search

21 February 2006 (21.02.2006)

Date of mailing of the international search report

09 MAY 2006

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Facsimile No. (571) 273-3201

Authorized officer

Marjorie Moran.

Telephone No. (571)272-1600

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US05/00386

Continuation of B. FIELDS SEARCHED Item 3:

East, STN, Biosis, Compuscience, Biotechno, Biotechds, Medline, Embase, WPI covering search hybridizing, PCR, amplificaiton, comparing mass, identify, database, master database, remote ordering, remote user, mass spectrometer, mass spectra, statistical algorithm.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US05/00386

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y,P	WO 01/57518 (GOODNOUGH) 9 August 2001 (9.8.2001), pages 11-14, 16-19, 29	1-20
Y,P	US 6,393,367 (TANG et al) 21 May 2002 (21.5.2002).	8-9
Y	Holm et al., Bioinformatics, 1998, Vol. 14, No. 5, pages 423-429.	1-20